What is claimed is:

1. A semiconductor device comprising a substrate, a semiconductor layer including a source region, a channel region and a drain region formed on the substrate, an insulating film formed on the semiconductor layer, and granular charge trapping bodies inside the insulating film to trap the charge of injected carriers.

2. The semiconductor device according to claim 1, wherein the substrate is an insulating substrate.

3. The semiconductor device according to Claim 1, wherein the charge trapping bodies are a plurality of particles of semiconductor or metal.

4. The semiconductor device according to Claim 3, wherein the plurality of particles are silicon particles.

5. The semiconductor device according to Claim 4, wherein the silicon particles have a particle diameter of 1 μm or less.

6. The semiconductor device according to Claim 4, wherein the silicon particles have a particle diameter of 1000 angstroms or less.

7. The semiconductor device according to Claim 4, wherein the silicon particles have a particle diameter of 500 angstroms or less.

8. The semiconductor device according to Claim 3, wherein the insulating film comprises a first insulating film formed on the semiconductor layer and a second insulating film formed on the first insulating film; and wherein the plurality of particles are located between the first insulating film and the second insulating film.

9. The semiconductor device according to Claim 8, wherein the first insulating film is formed in an extremely thin thickness.

10. The semiconductor device according to Claim 9, wherein the first insulating film is formed so as to have a film thickness of 500 angstroms or less.

11. The semiconductor device according to Claim 9, wherein the first insulating film is formed so as to have a film thickness of 100 angstroms or less.

12. The semiconductor device according to Claim 9, wherein the first insulating film is formed so as to have a film thickness of 50 angstroms or less.

13. The semiconductor device according to Claim 1, wherein a control gate for electrical field application is formed on the insulating film facing the channel region.

14. The semiconductor device according to Claim 1, wherein the substrate and the semiconductor layer constitute a thin-film transistor (TFT).

15. The semiconductor device according to Claim 14, wherein the semiconductor layer is formed in a low-temperature polysilicon process, and the thin-film transistor is formed as a low-temperature polysilicon TFT.

16. An electro-optical device comprising a display unit, a data driver, a scan driver and a memory unit having a plurality of memory elements, wherein the semiconductor device according to claim 1 is used as a memory element of the memory unit.

17. An electro-optical device comprising a display unit, a data driver, a scan driver and a memory unit having a plurality of memory elements, wherein the semiconductor device according to claim 1 is used as a memory element disposed in a pixel of the display unit.

18. The electro-optical device according to claim 16, wherein the display unit, the data driver, and the scan driver

are disposed on a common substrate.

19. An electronic apparatus having an electro-optical device as claimed in claim 16.

20. An electronic apparatus having an electro-optical device as claimed in claim 17.

21. A method of manufacturing a semiconductor device comprising a first step of forming a semiconductor layer which has a source region, a channel region and a drain region on a substrate; and a second step of forming an insulating body, which has granular charge trapping bodies inside to trap the charge of injected carriers, on the semiconductor layer.

22. The method of manufacturing a semiconductor device according to Claim 21, wherein the second step comprises the steps of: forming a first insulating film, constituting a portion of the insulating film, on the semiconductor layer; depositing the granular charge trapping bodies on the first insulating film; and forming a second insulating film, constituting a second portion of the insulating film, on the first insulating film while the charge trapping bodies are kept on the first insulating film.

23. The method of manufacturing a semiconductor device according to Claim 22, wherein the first insulating film is

formed by plasma oxidation.

24. The method of manufacturing a semiconductor device according to Claim 22, wherein the charge trapping bodies are formed by sputtering and etching.

25. The method of manufacturing a semiconductor device according to Claim 24, wherein the charge trapping bodies are formed by Al-Si sputtering and etching.

26. The method of manufacturing a semiconductor device according to Claim 22, wherein the second insulating film is formed by the CVD method.

27. The method of manufacturing a semiconductor device according to Claim 22, wherein the first insulating film is formed by plasma oxidation, the charge trapping bodies are formed by sputtering and etching, and the second insulating film is formed by the CVD method.

28. The method of manufacturing a semiconductor device according to Claim 21, wherein the granular charge trapping bodies are silicon particles.

29. The method of manufacturing a semiconductor device according to Claim 21, wherein the first step is a step to form the semiconductor layer in a low-temperature polysilicon

process, thus constructing the substrate and the semiconductor layer as a low-temperature polysilicon TFT (thin-film transistor).

5